



TITLE: G-Protein Fusion Receptors And  
Chimeric Gaba<sub>A</sub> Receptors  
INVENTORS: Thomas STORMANN, et al.  
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### ClustalW Formatted Alignments

SEQ ID 1 M A F Y S C C W V L L A L T W H T S A Y G P D Q R  
SEQ ID 2 M L L L L L L A P L F L R P P G A G G A Q T P N A  
SEQ ID 3 M G P G A P F A R V G W P L P L L V V M A A G V A  
SEQ ID 4 M A S P R S S G Q P G P X P P P P P P A R L L L  
SEQ ID 5 M V C E G K R S A S C P C F F L L T A K F Y W I L

SEQ ID 1 A Q K K G D I I L G G L F P I H F G V A A K D Q D  
SEQ ID 2 T S E G C Q I I H P P W E G G I R Y R G L T R D Q  
SEQ ID 3 P V W A S H S P H L P R P H S R V P P H P S S E R  
SEQ ID 4 L L L L P L L L P L A P G A W G W A R G A P R P P  
SEQ ID 5 T M M Q R T H S Q E Y A H S I R V D G D I I L G G

SEQ ID 1 L K S R P E S V E C I R Y N F R G F R W L Q A M I  
SEQ ID 2 V K A I N F L P V D Y E I E Y V C R G E R E V V G  
SEQ ID 3 R A V Y I G A L F P M S G G W P G G Q A C Q P A V  
SEQ ID 4 P S S P P L S I M G L M P L T K E V A K G S I G R  
SEQ ID 5 L F P V H A K G E R G V P C G E L K K E K G I H R

SEQ ID 1 F A I E E I N S S P A L L P N L T L G Y R I F D T  
SEQ ID 2 P K V R K C L A N G S W T D M D T P S R C V R I C  
SEQ ID 3 E M A L E D V N S R R D I L P D Y E L K L I H H D  
SEQ ID 4 G V L P A V E L A I E Q I R N E S L L R P Y F L D  
SEQ ID 5 L E A M L Y A I D Q I N K D P D L L S N I T L G V

SEQ ID 1 C N T V S K A L E A T L S F V A Q N K I D S L N L  
SEQ ID 2 S K S Y L T L E N G K V F L T G G D L P A L D G A  
SEQ ID 3 S K C D P G Q A T K Y L Y E L L Y N D P I K I I L  
SEQ ID 4 L R L Y D T E C D N A K G L K A F Y D A I K Y G P  
SEQ ID 5 R I L D T C S R D T Y A L E Q S L T F V Q A L I E

SEQ ID 1 D E F C N C S E H I P S T I A V V G A T G S G V S  
SEQ ID 2 R V D F R C D P D F H L V G S S R S I C S Q G Q W  
SEQ ID 3 M P G C S S V S T L V A E A A R M W N L I V L S Y  
SEQ ID 4 N H L M V F G G V C P S V T S I I A E S L Q G W N  
SEQ ID 5 K D A S D V K C A N G D P P I F T K P D K I S G V

SEQ ID 1 T A V A N L L G L F Y I P Q V S Y A S S S R L L S  
SEQ ID 2 S T P K P H C Q V N R T P H S E R R A V Y I G A L  
SEQ ID 3 G S S S P A L S N R Q R F P T F F R T H P S A T L  
SEQ ID 4 L V Q L S F A A T T P V L A D K K K Y P Y F F R T  
SEQ ID 5 I G A A A S S V S I M V A N I L R L F K I P Q I S

Figure 1a

SEQ ID 1 NKNQFKSFLRTIPNDEHQATAMADI  
SEQ ID 2 FPMSSGGWPGGQACQPAVEMALDVDN  
SEQ ID 3 HNPTRVKLFKKGWKKIATIQQTTE  
SEQ ID 4 VPSDNAVNPAILKLLKHYYQWKRVT  
SEQ ID 5 YASTAPELSDNTRYDFFSRVVPDSS

SEQ ID 1 IEYFRWNWVGTTAAADDDYGRPGIEK  
SEQ ID 2 SRRDILPDYELKLIHHDSKCDPGQA  
SEQ ID 3 VFTSTLDDLEERVKEAGIEITFRQS  
SEQ ID 4 LTQDVQRFSEVRNDLTGVLYGEDI  
SEQ ID 5 YQAQAMVDIVTALGWNYVSTLASEG

SEQ ID 1 FREEAEERDICI DFSEELISQYSDDEE  
SEQ ID 2 TKYLYELLYNDPIKILMPGCSSVS  
SEQ ID 3 FFSDDPAVPVKNLKRQDARIIVGLFY  
SEQ ID 4 ISDTESEFSNDPCTSVKKLKGNDVRI  
SEQ ID 5 NYGESGVEAFTQISREIGCV CIAQS

SEQ ID 1 EIQHVVEVIQNSTAKVIVVFSSGPD  
SEQ ID 2 TLVAEAAARMWNLIVLSYGSSSPALS  
SEQ ID 3 ETEARKVFCEVYKERLFGKKYVWFL  
SEQ ID 4 ILGQFDQNMAAKVFC CAYEENMYGS  
SEQ ID 5 QKIPREPRPGEF EKIIKRLLLETPNA

SEQ ID 1 LEPLIKEIVRRNITGKIWLASEAWA  
SEQ ID 2 NRQRFPTFFRTHPSATLHNPTRVKL  
SEQ ID 3 IGWYADNWFKIYDPSINCTVDEMTE  
SEQ ID 4 KYQWIIIPGWYEP SWWEQVHTEANSS  
SEQ ID 5 RAVIMFANEDDIRRI LEAAKKLNQS

SEQ ID 1 SSSLIAMPPQYFHVVG GTIGFALKAG  
SEQ ID 2 FEKKGWKKIATIQQTTEVFTSTLDD  
SEQ ID 3 AVEGHITTEIVMLNPANTRSI SNMT  
SEQ ID 4 RCLRKNNLLAAMEGYIGVDFEPLSSK  
SEQ ID 5 GHFLWIGSDSWGSK IAPVYQQEEIA

SEQ ID 1 QIPGFREFLKKVHPRKSVHNGFAKE  
SEQ ID 2 LEERVKEAGIEITFRQSFFSDDPAVP  
SEQ ID 3 SQEFVEKLTKRLLKRHP EETGGFQEA  
SEQ ID 4 QIKTISGKTPQQYEREYNNKRSGVG  
SEQ ID 5 EGAVTILPKRASIDGFDRYFRSRTL

Figure 1b

SEQ ID 1 F W E E T F N C H L Q E G A K G P L P V D T F L R  
SEQ ID 2 V K N L K R Q D A R I I V G L F Y E T E A R K V F  
SEQ ID 3 P L A Y D A I W A L A L A L N K T S G G G G R S G  
SEQ ID 4 P S K F H C Y A Y D G I W V I A K T L Q R A M E T  
SEQ ID 5 A N N R R N V W F A E F W E E N F G C K L G S H G

SEQ ID 1 G H E E S G D R F S N S S T A F R P L C T G D E N  
SEQ ID 2 C E V Y K E R L F G K K Y V W F L I G W Y A D N W  
SEQ ID 3 V R L E D F N Y N N Q T I T D Q I Y R A M N S S S  
SEQ ID 4 L H A S S R H Q R I Q D F N Y T D H T L G R I I L  
SEQ ID 5 K R N S H I K K C T G L E R I A R D S S Y E Q E G

SEQ ID 1 I S S V E T P Y I D Y T H L R I S Y N V Y L A V Y  
SEQ ID 2 F K I Y D P S I N C T V D E M T E A V E G H I T T  
SEQ ID 3 F E G V S G H V V F D A S G S R M A W T L I E Q L  
SEQ ID 4 N A M N E T N F F G V T G Q V V F R N G E R M G T  
SEQ ID 5 K V Q F V I D A V Y S M A Y A L H N M H K D L C P

SEQ ID 1 S I A H A L Q D I Y T C L P G R G L F T N G S C A  
SEQ ID 2 E I V M L N P A N T R S I S N M T S Q E F V E K L  
SEQ ID 3 Q G G S Y K K I G Y Y D S T K D D L S W S K T D K  
SEQ ID 4 I K F T Q F Q D S R E V K V G E Y N A V A D T L E  
SEQ ID 5 G Y I G L C P R M S T I D G K E L L G Y I R A V N

SEQ ID 1 D I K K V E A W Q V L K H L R H L N F T N N M G E  
SEQ ID 2 T K R L K R H P E E T G G F Q E A P L A Y D A I W  
SEQ ID 3 W I G G S P P A D Q T L V I K T F R F L S Q K  
SEQ ID 4 I I N D T I R F Q G S E P P K D K T I I L E Q L R  
SEQ ID 5 F N G S A G T P V T F N E N G D A P G R Y D I F Q

SEQ ID 1 Q V T F D E C G D L V G N Y S I I N W H L S P E D  
SEQ ID 2 A L A L A L N K T S G G G G R S G V R L E D F N Y  
SEQ ID 3  
SEQ ID 4 K I S L P  
SEQ ID 5 Y Q I T N K S T E Y K V I G H W T N Q L H L K V E

SEQ ID 1 G S I V F K E V G Y Y N V Y A K K G E R L F I N E  
SEQ ID 2 N N Q T I T D Q I Y R A M N S S S F E G V S G H V  
SEQ ID 3  
SEQ ID 4  
SEQ ID 5 D M Q W A H R E H T H P A S V C S L P C K P G E R

Figure 1c

SEQ ID 1 E K I L W S G F S R E V P F S N C S R D C L A G T  
SEQ ID 2 V F D A S G S R M A W T L I E Q L Q G G S Y K K I  
SEQ ID 3  
SEQ ID 4  
SEQ ID 5 K K T V K G V P C C W H C E R C E G Y N Y Q V D E

SEQ ID 1 R K G I I E G E P T C C F E C V E C P D G E Y S D  
SEQ ID 2 G Y Y D S T K D D L S W S K T D K W I G G S P P A  
SEQ ID 3  
SEQ ID 4  
SEQ ID 5 L S C E L C P L D Q R P N M N R T G C Q L I P I I

SEQ ID 1 E T D A S A C N K C P D D F W S N E N H T S C I A  
SEQ ID 2 D Q T L V I K T F R F L S Q K  
SEQ ID 3  
SEQ ID 4  
SEQ ID 5 K L E W H S P W

SEQ ID 1 K E I E F L S W T E P F  
SEQ ID 2  
SEQ ID 3  
SEQ ID 4  
SEQ ID 5

Figure 1d

SEQ ID 6 G I A L T L F A V L G I F L T A F V L G V F I K F R N T P I  
SEQ ID 7 L F I S V S V L S S L G I V L A V V C L S F N I Y N S H V R  
SEQ ID 8 L F I S V S V L S S L G I V L A V V C L S F N I Y N S H V R  
SEQ ID 9 L Y S I L S A L T I L G M I M A S A F L F F N I K N P N Q K  
SEQ ID 10 A V V P V F V A I L G I I A T T F V I V T F V R Y N D T P I

SEQ ID 6 V K A T N R E L S Y L L L F S L L C C F S S S L F F I G E P  
SEQ ID 7 Y I Q N S Q P N L N N L T A V G C S L A L A A V F P L G L D  
SEQ ID 8 Y I Q N S Q P N L N N L T A V G C S L A L A A V F P L G L D  
SEQ ID 9 L I K M S S P Y M N N L I I L G G M L S Y A S I F L F G L D  
SEQ ID 10 V R A S G R E L S Y V L L T G I F L C Y S I T F L M I A A P

SEQ ID 6 Q D W T C R L R C P A F G I S F V L C I S C I L V K T N R V  
SEQ ID 7 G Y H I G R N Q F P F V C Q A R L W L L G L G F S L G Y G S  
SEQ ID 8 G Y H I G R N Q F P F V C Q A R L W L L G L G F S L G Y G S  
SEQ ID 9 G S F V S E K T F E T L C T V R T W I L T V G Y T T A F G A  
SEQ ID 10 D T I I C S F R R V F L G L G M C F S Y A A L L T K T N R I

SEQ ID 6 L L V F E A K I P T S F H R K W W G L N L Q F L L V F L C T  
SEQ ID 7 M F T K I W W V H T V F T K K E E K K E W R K T L E P W K L  
SEQ ID 8 M F T K I W W V H T V F T K K E E K K E W R K T L E P W K L  
SEQ ID 9 M F A K T W R V H A I F K N V K M K K K I I K D Q K L L V I  
SEQ ID 10 H R I F E Q G K K S V T A P K F I S P A S Q L V I T F S L I

SEQ ID 6 F M Q I V I C V I W L Y T A P P S S Y R N Q E L S D E I I F  
SEQ ID 7 Y A T V G L L V G M D V L T L A I W Q I V D P L H R T I E T  
SEQ ID 8 Y A T V G L L V G M D V L T L A I W Q I V D P L H R T I E T  
SEQ ID 9 V G G M L L I D L C I L I C W Q A V D P L R R T V E K Y S M  
SEQ ID 10 S V O L L G V F V W F V V D P P H I I I O Y G E O R T L O P

SEQ ID 6 I T C H E G S L M A L G F L I G Y T C L L A A I C F F F A F  
SEQ ID 7 F A K E E P K E D I D V S I L P C L E H C S S R K M N T W L  
SEQ ID 8 F A K E E P K E D I D V S I L P C L E H C S S R K M N T W L  
SEQ ID 9 E P D P A G R D I S I R P L L E H C E N T H M T I W L G I V  
SEQ ID 10 E K A R G V L K C D I S D L S L I C S L G Y S I L L M V T C

SEQ ID 6 K S R K L P E N F N E A K F I T F S M L I F F I V W I S F I  
SEQ ID 7 G I F Y G Y K G L L L L L G I F L A Y E T K S V S T E K I N  
SEQ ID 8 G I F Y G Y K G L L L L L G I F L A Y E T K S V S T E K I N  
SEQ ID 9 Y A Y K G L L M L F G C F L A W E T R N V S I F A L N D S K  
SEQ ID 10 T V Y A I K T R G V P E T F N E A K P I G F T M Y T T C I I

Figure 2a

SEQ ID 6 P A Y A S T Y G K F V S A V E V I A I L A A S F G L L A C I  
SEQ ID 7 D H R A V G M A I Y N V A V L C L I T A P V T M I L S S Q Q  
SEQ ID 8 D H R A V G M A I Y N V A V L C L I T A P V T M I L S S Q Q  
SEQ ID 9 Y I G M S V Y N V G I M C I I G A A V S F L T R D Q P N V Q  
SEQ ID 10 W L A F I P I F F G T A Q S A E K M Y I Q T T T L T V S M S

SEQ ID 6 F F N K I Y I I L F  
SEQ ID 7 D A A F A F A S L A I V F S S Y I T L V V L F V P K M  
SEQ ID 8 D A A F A F A S L A I V F S S Y I T L V V L F V P K M  
SEQ ID 9 F C I V A L V I I F C S T I T L C L V F V P K L  
SEQ ID 10 L S A S V S L G M L Y M P K V Y I I I F

Figure 2b

SEQ ID 11 K P S R N T I E E V R O S T A A H A F K V A A P A T L E R S  
SEQ ID 12 R P L I T R G E W C S E A C D T M K T G S S T A N N E E E K  
SEQ ID 13 R P L I T R G E W C S E A C D T M K T G S S T A N N E E E K  
SEQ ID 14 I T L R T N P D A A T O N R R F C F T Q N C K K E D S K T S  
SEQ ID 15 H P E Q N V C K R K R S F K A V V T A A T M C S K L I C K G

SEQ ID 11 N V S R K R S S S L G G S T G S T P S S S I S S K S N S E D  
SEQ ID 12 S R L L E K E N R E L E K I I A E K E E R V S E L R H O L C Q  
SEQ ID 13 S R L L E K E N R E L E K I I A E K E E R V S E L R H O L C Q  
SEQ ID 14 T S V T S V N C A S T S R L E G L O S E N T R L R M K I T E  
SEQ ID 15 N D R P N G E V K S E L C E S L E T N S K S S V E F P M V K

SEQ ID 11 P F P O P E R Q K Q Q C P L A L T Q Q E Q Q Q Q F L T L P Q  
SEQ ID 12 S R Q Q L R S R R H P P T P P E P S G G L P R G P P E P P D  
SEQ ID 13 S R Q Q L R S R R H P P T P P E P S G G L P R G P P E P P D  
SEQ ID 14 L D K D L E E V T M G L Q D T P E K T T Y I K Q N H Y Q E L  
SEQ ID 15 S G S T S

SEQ ID 11 Q Q R S Q Q Q P R C K Q K V I F G S G T V T F S L S F D E P  
SEQ ID 12 R L S C D G S R V H L L Y K  
SEQ ID 13 R L S C D G S R V H L L Y K  
SEQ ID 14 N D I L N L G N F T E S T D G G K A I L K N H L D Q N P C L  
SEQ ID 15

SEQ ID 11 Q K N A M A H G N S T H Q N S L E A G K S S D T L T R H Q P  
SEQ ID 12  
SEQ ID 13  
SEQ ID 14 Q W N T T E P S R T C K D P I E D I N S P E H I Q R R L S L  
SEQ ID 15

SEQ ID 11 L L P L Q C G E T D L D L T V G E T G L Q G P V G G D Q R P  
SEQ ID 12  
SEQ ID 13  
SEQ ID 14 Q L P I L H H A Y L P S I G G V D A S C V S P C V S P T A S  
SEQ ID 15

SEQ ID 11 E V E D P E E L S P A L V V S S S Q S F V I S G G G S T V T  
SEQ ID 12  
SEQ ID 13  
SEQ ID 14 P R H R H V F P S F R V M V S G L  
SEQ ID 15

Figure 3a

SEQ ID 11 E N V V N S  
SEQ ID 12  
SEQ ID 13  
SEQ ID 14  
SEQ ID 15

Figure 3b



SEQ. ID. NO. 16 M A R S L T W G C C P W C L T E E E K T A A R I Q C E I N R  
 SEQ. ID. NO. 17 M A R S L T W R C C P W C L T E D E K A A A R V Q C E I N R

SEQ. ID. NO. 16 I L L E C K K C E R E E L K L L L L G P G E S G K S T F I X  
 SEQ. ID. NO. 17 I L L E C K K C O R G E L K L L L L G P G E S G K S T F I X

SEQ. ID. NO. 16 Q M R I I H G V G Y S E E D R R A F R L L I Y Q N I F V S M  
 SEQ. ID. NO. 17 Q M R I I H G A G Y S E E E R K G F R P L V Y Q N I F V S M

SEQ. ID. NO. 16 C A M I D A M D R L Q I P F S R P D S K Q H A S L V M T Q C  
 SEQ. ID. NO. 17 R A M I E A M E R L Q I P F S R P E S K H A S L V M S Q C

SEQ. ID. NO. 16 P Y K V S T F E K P Y A V A M Q Y L W R D A G I R A C Y E R  
 SEQ. ID. NO. 17 P Y K V T T F E K R Y A A A M G W L W R D A G I R A C Y E R

SEQ. ID. NO. 16 R R E F H L L D S A V Y Y L S H L E R I S E D S Y I P T A Q  
 SEQ. ID. NO. 17 R R E F H L L D S A V Y Y L S H L E R I T E E G Y V P T A Q

SEQ. ID. NO. 16 D V L R S R M P T T G I N E Y C F S V K K T K L R I V D V G  
 SEQ. ID. NO. 17 D V L R S R M P T T G I N E Y C F S V Q K T N L R I V D V G

SEQ. ID. NO. 16 G Q R S E R R K W I H C F E N V I A L I Y L A S L S E Y D Q  
 SEQ. ID. NO. 17 G Q K S E R K K W I H C F E N V I A L I Y L A S L S E Y D Q

SEQ. ID. NO. 16 C L E E N D Q E N R M E E S L A L F S T I L E L P W F K S T  
 SEQ. ID. NO. 17 C L E E N N Q E N R M K E S L A L F G T I L E L P W F K S T

SEQ. ID. NO. 16 S V I L F L N K T D I L E E K I H T S H L A T Y F P S F Q G  
 SEQ. ID. NO. 17 S V I L F L N K T D I L E E K I P T S H L A T Y F P S F Q G

SEQ. ID. NO. 16 P R R D A E A A K S F I L D M Y A R V Y A S C A E P Q D G G  
 SEQ. ID. NO. 17 P K Q D A E A A K R F I L D M Y T R M Y T G C V D G P E G S

SEQ. ID. NO. 16 R K G S R A R R F F A H F T C A T D T Q S V R S V F K D V R  
 SEQ. ID. NO. 17 K K G A R S R R L F S H Y T C A T D T Q N I R K V F K D V R

Figure 4a

SEQ. ID. NO. 16 D S V L A R Y L D E I N L L  
SEQ. ID. NO. 17 D S V L A R Y L D E I N L L

Figure 4b

ClustalW Formatted Alignments

SEQ. ID. NO. 18 A T G G C A T T T T A T A G C T G C T G C T G G G  
 SEQ. ID. NO. 19 A T G T T G C T G C T G C T G C T A C T G G C G C  
 SEQ. ID. NO. 20 A T G G G G C C C G G G G C C C T T T T G C C C  
 SEQ. ID. NO. 21 A T G G C T T C C C C G C G G A G C T C C G G G C

SEQ. ID. NO. 18 T C C T C T T G G C A C T C A C C T G G C A C A C  
 SEQ. ID. NO. 19 C A C T C T T C C T C C G C C C C C G G G C G C  
 SEQ. ID. NO. 20 G G G T G G G G T G G C C A C T G C C G C T T C T  
 SEQ. ID. NO. 21 A G C C C G G G C C G C - G C C G C C G C C G C C

SEQ. ID. NO. 18 C T C T G C C T A C G G G C C A G A C C A G C G A  
 SEQ. ID. NO. 19 G G G C G G G G C G C A G A C C C C C A A C G C C  
 SEQ. ID. NO. 20 G G T T G T G A T G G C G G C A G G G G T G G C T  
 SEQ. ID. NO. 21 A C C G C C G C C C G C G C G C C T G C T A C T G

SEQ. ID. NO. 18 G C C C A A A A G A A G G G G G A C A T T A T C C  
 SEQ. ID. NO. 19 A C C T C A G A A G G T T G C C A G A T C A T A C  
 SEQ. ID. NO. 20 C C G G T G T G G G C C T C C C A C T C C C C C C  
 SEQ. ID. NO. 21 C T A C T G C T G C T G C C G C T G C T G C T G C

SEQ. ID. NO. 18 T T G G G G G G C T C T T T C C T A T T C A T T T  
 SEQ. ID. NO. 19 A C C C G C C C T G G G A A G G G G G C A T C A G  
 SEQ. ID. NO. 20 A T C T C C C G C G G C C T C A C T C G C G G G T  
 SEQ. ID. NO. 21 C T C T G G C G C C C G G G G C C T G G G G C T G

SEQ. ID. NO. 18 T G G A G T A G C A G C T A A A G A T C A A G A T  
 SEQ. ID. NO. 19 G T A C C G G G G C C T G A C T C G G G A C C A G  
 SEQ. ID. NO. 20 C C C C C G C A C C C C T C C T C A G A A C G G  
 SEQ. ID. NO. 21 G G C G C G G G G C G C C C C C G G C C G C C G

SEQ. ID. NO. 18 C T C A A A T C A A G G C C G G A G T C T G T G G  
 SEQ. ID. NO. 19 G T G A A G G C T A T C A A C T T C C T G C C A G  
 SEQ. ID. NO. 20 C G C G C A G T G T A C A T C G G G G C A C T G T  
 SEQ. ID. NO. 21 C C C A G C A G C C C G C C G C T C T C C A T C A

SEQ. ID. NO. 18 A A T G T A T C A G G T A T A A T T T C C G T G G  
 SEQ. ID. NO. 19 T G G A C T A T G A G A T T G A G T A T G T G T G  
 SEQ. ID. NO. 20 T T C C C A T G A G C G G G G G C T G G C C A G G  
 SEQ. ID. NO. 21 T G G G C C T C A T G C C G C T C A C C A A C G A

Figure 5a

SEQ. ID. NO. 18 G T T T C G C T G G T T A C A G G C T A T G A T A  
SEQ. ID. NO. 19 C C G G G G G A G C G C G A G G T G G T G G G G  
SEQ. ID. NO. 20 G G G C C A G G C C T G C C A G C C C G C G G T G  
SEQ. ID. NO. 21 G G T G G C C A A G G G C A G C A T C G G G C G C

SEQ. ID. NO. 18 T T T G C C A T A G A G G A G A T A A A C A G C A  
SEQ. ID. NO. 19 C C C A A G G T C C G C A A G T G C C T G G C C A  
SEQ. ID. NO. 20 G A G A T G G C G C T G G A G G A C G T G A A T A  
SEQ. ID. NO. 21 G G T G T G C T C C C C G C C G T G G A A C T G G

SEQ. ID. NO. 18 G C C C A G C C C T T C T T C C C A A C T T G A C  
SEQ. ID. NO. 19 A C G G C T C C T G G A C A G A T A T G G A C A C  
SEQ. ID. NO. 20 G C C G C A G G G A C A T C C T G C C G G A C T A  
SEQ. ID. NO. 21 C C A T C G A G C A G A T C C G C A A C G A G T C

SEQ. ID. NO. 18 G C T G G G A T A C A G G A T A T T T G A C A C T  
SEQ. ID. NO. 19 A C C C A G C C G C T G T G T C C G A A T C T G C  
SEQ. ID. NO. 20 T G A G C T C A A G C T C A T C C A C C A C G A C  
SEQ. ID. NO. 21 A C T C C T G C G C C C C T A C T T C C T C G A C

SEQ. ID. NO. 18 T G C A A C A C C G T T T C T A A G G C C T T G G  
SEQ. ID. NO. 19 T C C A A G T C T T A T T T G A C C C T G G A A A  
SEQ. ID. NO. 20 A G C A A G T G T G A T C C A G G C C A A G C A  
SEQ. ID. NO. 21 C T G C G G C T C T A T G A C A C G G A G T G C G

SEQ. ID. NO. 18 A A G C C A C C C T G A G T T T T G T T G C T C A  
SEQ. ID. NO. 19 A T G G G A A G G T T T T C C T G A C G G G T G G  
SEQ. ID. NO. 20 C C A A G T A C C T A T A T G A G C T G C T C T A  
SEQ. ID. NO. 21 A C A A C G C A A A A G G G T T G A A A G C C T T

SEQ. ID. NO. 18 A A A C A A A A T T G A T T C T T T G A A C C T T  
SEQ. ID. NO. 19 G G A C C T C C C A G C T C T G G A C G G A G C C  
SEQ. ID. NO. 20 C A A C G A C C C T A T C A A G A T C A T C C T T  
SEQ. ID. NO. 21 C T A C G A T G C A A T A A A A T A C G G G C C G

SEQ. ID. NO. 18 G A T G A G T T C T G C A A C T G C T C A G A G C  
SEQ. ID. NO. 19 C G G G T G G A T T T C C G G T G T G A C C C C G  
SEQ. ID. NO. 20 A T G C C T G G C T G C A G C T C T G T C T C C A  
SEQ. ID. NO. 21 A A C C A C T T G A T G G T G T T T G G A G G C G

Figure 5b